UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,103	09/13/2000	Alex Dubrovsky	EMC00-001(00010)	7599

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EXAMINER
DUONG, THOMAS

ART UNIT	PAPER NUMBER
2145	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33 and 35-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33 and 35-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This office action is in response to the amendment filed on August 9, 2004. The

amendment filed on August 9, 2004 has been entered and made of record. *Claims 1-33*

and 35-45 are presented for further consideration and examination.

Response to Argument

2.   Applicant's arguments, see pg.18, para.2, line 1 – pg.20, para.1, line 4, filed August 9,

2004, with respect to *claims 1, 12, 24 and 27* have been fully considered and are

persuasive. The previous rejection has been withdrawn.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   *Claims 1-33 and 35-45* are rejected under 35 U.S.C. 102(e) as being anticipated by

Nolan (US006640278B1).

5.   With regard to *claims 1, 12, 24, 27 and 33,* Nolan reference discloses,

- *receiving a generic zone control command;* (Nolan, col.3, lines 7-11; col.8, lines

  37-40)

  Nolan teaches of the communication interface of the SAN server receiving a data

  storage transactions which include read and write requests as well as status

  inquiries.

- *translating the generic zone control command to at least one vendor specific*

  device command of a plurality of vendor specific, device commands that

  respectively control zoning in a plurality of different vendor devices; and (Nolan,

  col.2, lines 18-40; col.8, lines 24-34; col.9, lines 21-31; col.10, lines 27-49)

  Nolan teaches of the storage transactions being translated to a common

  messaging format internal to the system for routing among the various interfaces,

  independently of the protocols executed by those interfaces. Furthermore, Nolan

  teaches that the storage domain routing resources map the transactions within

  the storage domain for particular storage devices.

- *performing functions associated with the at least one vendor specific device*

  command to control zoning in the device (Nolan, col.26, line 24 – col.27, line 30;

  col.34, line 25 – col.35, line 2)

  Nolan teaches of defining and redefining zones or storage domains at the LUN

  level by the storage domain manager because it offers a comprehensive set of

  centralized management capabilities that can be leveraged from a single

  management interface, regardless of vendor.

6.   With regard to *claims 2-4 and 13-15,* Nolan reference discloses,

- *identifying a vendor of at least one device within a zone corresponding to the generic zone control command; and* (Nolan, col.8, lines 41-62)

    Nolan teaches of identifying the target device based on the identifier in the request.

- *selecting a set of vendor specific device commands, from the plurality of vendor specific device commands that respectively control zoning in devices from different vendors, that corresponds to the vendor of at least one device within the zone* (Nolan, col.8, line 63 – col.9, line 31)

    Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

- *identifying devices within the zone that are affected by the generic zone control command; and* (Nolan, col.8, line 63 – col.9, line 31)

    Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel drivers for controlling the storage.

- *identifying vendors of the devices within the zone that are affected by the generic zone control command* (Nolan, col.8, lines 41-62)

Nolan teaches of identifying the target device based on the identifier in the

request.

7.   With regard to *claims 5-7, 16-18, 25-26 and 35,* Nolan reference discloses,

- *the plurality of vendor specific device commands include sets of vendor specific*

  device commands; and (Nolan, col.8, line 63 – col.9, line 31)

  Nolan teaches of mapping the storage transaction request to a virtual circuit,

  which comprises the necessary devices to support a storage transaction,

  corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is

  typically the format translation and communication channel driver for controlling

  the storage.

- *wherein the step of translating includes the steps of:*

  - *selecting a set of vendor specific device commands that can control zoning*

    within a device to which the generic zone control command is directed; and

  - *dynamically loading the set of vendor specific device commands into a*

    management application to allow the management application to control

    zoning within the device to which the generic zone control command is

    directed (Nolan, col.8, line 63 – col.9, line 31)

  Nolan teaches of mapping the storage transaction request to a virtual circuit,

  which comprises the necessary devices to support a storage transaction,

  corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is

  typically the format translation and communication channel driver for controlling

  the storage.

- *selecting the at least one vendor specific device command, within the set of vendor specific device commands, that performs zoning operations, in the device to which the generic zone control command is directed, in accordance with the generic zone control command; and* (Nolan, col.8, line 63 – col.9, line 31)

  Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

- *mapping parameters of the generic zone control command to parameters of the at least one vendor specific device command to provide the vendor specific device command with data required to perform the zoning operations in the device* (Nolan, col.8, line 63 – col.9, line 31)

  Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

8.   With regard to *claims 8 and 19,* Nolan reference discloses,

- *wherein the step of receiving receives the generic zone control command from a device management application that can control zoning in a network of devices manufactured by different vendors.* (Nolan, col.3, lines 1-11; col.8, lines 37-40)

Nolan teaches of the communication interface of the SAN server receiving a data

storage transactions which include read and write requests as well as status

inquiries. Nolan teaches of the use of the storage domain manager to configure

the storage domains or zones.

9.   With regard to *claims 9 and 20*, Nolan reference discloses,

- *wherein the step of performing performs the at least one vendor specific device*

    command to control zoning within a device from a vendor that is a vendor of

    devices that are controlled by the vendor specific device command to which the

    generic zone control command is translated. (Nolan, col.26, line 24 – col.27, line

    30; col.34, line 25 – col.35, line 2)

    Nolan teaches of defining and redefining zones or storage domains at the LUN

    level by the storage domain manager because it offers a comprehensive set of

    centralized management capabilities that can be leveraged from a single

    management interface, regardless of vendor.

10.   With regard to *claims 10 and 21*, Nolan reference discloses,

- *wherein the step of translating includes the steps of:*

    - *loading a library of vendor specific device commands into a management*

        application based on an identity of a vendor of a device affected by the

        generic zone control command; and (Nolan, col.3, lines 1-11; col.8, lines 37-*

        40)

    Nolan teaches of the communication interface of the SAN server receiving a

    data storage transactions which include read and write requests as well as

status inquiries. Nolan teaches of the use of the storage domain manager to
configure the storage domains or zones.

- *calling the at least one vendor specific device command using the generic
  zone control command having the same format as the at least one vendor
  specific device command perform zoning operations within the device
  affected by the generic zone control command.* (Nolan, col.26, line 24 –
  col.27, line 30; col.34, line 25 – col.35, line 2)

Nolan teaches of defining and redefining zones or storage domains at the
LUN level by the storage domain manager because it offers a comprehensive
set of centralized management capabilities that can be leveraged from a
single management interface, regardless of vendor.

11.   With regard to *claims 11 and 22-23,* Nolan reference discloses,

- *wherein the steps of receiving, translating and performing are processed by a
  management application that controls zoning within switches in a data storage
  network and wherein the step of translating includes a step of loading a
  dynamically linked library of vendor specific device commands, selected based
  on a vendor of a device affected by the generic zone control command, into a
  memory for use by the management application to control zoning in the device.*
  (Nolan, col.3, lines 1-11; col.8, lines 37-40)

Nolan teaches of the communication interface of the SAN server receiving a data
storage transactions which include read and write requests as well as status
inquiries. Nolan teaches of the use of the storage domain manager to configure
the storage domains or zones.

12.   With regard to _claims 28-32,_ Nolan reference discloses,

* _wherein the steps of receiving, translating and performing are executed by a_

    management application operating in a management station computer system,

    the management application controlling zoning within switches by transmitting

    the at least one vendor specific device command over a network to a

    corresponding at least one vendor specific switch device after translation of the

    generic zone control command. (Nolan, col.8, lines 41-62)

    Nolan teaches of identifying the target device based on the identifier in the

    request. It is obvious to one of ordinary skill in the art that the first vendor

    specific zone control command will be sent to the first vendor specific device

    identified by the corresponding identifier and the second vendor specific zone

    control command will be sent to the second vendor specific device identified by

    the corresponding identifier.

13.   With regard to _claim 36,_ Nolan reference discloses,

* _wherein receiving the generic zone control command includes receiving a_

    configuration command to configure a zone in the device to support access in a

    storage area network. (Nolan, col.3, lines 7-11; col.8, lines 37-40)

    Nolan teaches of the communication interface of the SAN server receiving a data

    storage transactions which include read and write requests as well as status

    inquiries.

14.   With regard to *claims 37-39 and 42-44,* Nolan reference discloses,

- *wherein controlling zoning within the device includes controlling which of multiple*

    ports in the device shall be grouped together to form the zone in the device

    through which servers are able to access a data storage system in a storage

    area network. (Nolan, col.23, line 44 – col.24, line 15; col.26, line 24 – col.27, line

    30; col.27, lines 5-12)

    Nolan teaches of defining and redefining zones or storage domains at the LUN

    level by the storage domain manager because it offers a comprehensive set of

    centralized management capabilities that can be leveraged from a single

    management interface, regardless of vendor. Nolan teaches of defining storage

    domains or zones based on identifiers and port numbers.

15.   With regard to *claims 40-41 and 45,* Nolan reference discloses,

- *identifying to which type of vendor device in a storage area network the generic*

    zone control command pertains; if the generic zone control command pertains to

    a first vendor type of device, forwarding the generic zone control command to the

    first vendor type of device; and (Nolan, col.8, lines 41-62)

    Nolan teaches of identifying the target device based on the identifier in the

    request. It is obvious to one of ordinary skill in the art that the first vendor

    specific zone control command will be sent to the first vendor specific device

    identified by the corresponding identifier and the second vendor specific zone

    control command will be sent to the second vendor specific device identified by

    the corresponding identifier.

> - *if the generic zone control command pertains to a second vendor type of device,*
>
>   *translating the generic zone control command to a vendor specific zone control*
>
>   *command associated with the second vendor type of switch and forwarding the*
>
>   *vendor specific zone control command to the second vendor type of device.*
>
> (Nolan, col.8, lines 41-62)
>
> Nolan teaches of identifying the target device based on the identifier in the
>
> request. It is obvious to one of ordinary skill in the art that the first vendor
>
> specific zone control command will be sent to the first vendor specific device
>
> identified by the corresponding identifier and the second vendor specific zone
>
> control command will be sent to the second vendor specific device identified by
>
> the corresponding identifier.

Conclusion

16.   The prior art made of record and not relied upon is considered pertinent to Applicants'
disclosure:

- Reuter et al. (US006745207B2)

- Hamilton, II et al. (US006834299B1)

- Wieland (US006643748B1)

17.   Any inquiry concerning this communication or earlier communications from the examiner
should be directed to Thomas Duong whose telephone number is 571/272-3911. The
examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the
examiner by telephone are unsuccessful, the examiner's supervisor, Jack B Harvey can
be reached on 571/272-3896. The fax phone numbers for the organization where this

application or proceeding is assigned are 703/872-9306 for regular communications and

703/872-9306 for After Final communications. Any inquiry of a general nature or relating

to the status of this application or proceeding should be directed to the receptionist

whose telephone number is 571/272-2100.

Thomas Duong (AU2145)

January 10, 2005

JACK B. HARVEY
SUPERVISORY PATENT EXAMINER